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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10 060,100

01/31/2002

Peter Gillingham

13896

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7590

01/31/2003

DOWELL & DOWELL PC  
SUITE 309  
1215 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VA 22202

EXAMINER

YOHA, CONNIE C

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 01/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/060,100

Examiner

Connie c. Yoha

Applicant(s)

GILLINGHAM ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.  
If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.  
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.  
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).  
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any claimed patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 31 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Information Disclosure Statement (IDS) filed on 9/12/02 was considered.
2. Claims 1-15 are presented for examination.

### **Abstract**

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the legal phraseology "comprising" (abstract, line 2).

Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claim 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Edman et al Pat. No. 6477071.

With regard to claim 1, Edman discloses a method for selectively enabling during a search operation, at least one of a plurality of matchline segments within a row of a content addressable memory (CAM) array, each matchline segment having a plurality of CAM cells coupled thereto (Abstract), the method comprising steps of: (a) setting the matchline segments to a first search result conditions (col. 5, line 45); (b) evaluating a first matchline segment for a second search result condition (a match condition) (col. 5, line 46-58); and (c) selectively enabling a second match line segment, in response to the second search result condition in the first matchline segment, so that said second search result condition can be detected thereat (col. 5, line 47-78)

With regard to claim 2, Edman discloses the method including propagating the second search result condition in the first match line segment along the row to indicate a search result condition for the row (col. 5, line 45-59).

With regard to claim 3, Edman discloses the first search result condition being a miss condition and the second search result condition being a match condition (col. 5, line 45-47).

With regard to claim 4, Edman discloses the step of setting includes precharging all the match line segments to a miss condition (col. 5, line 45).

With regard to claim 5, Edman discloses wherein evaluating the first match line segment comprises enabling the match line segment and sensing a logic state of the first match line segment (col. 5, line 45-61).

With regard to claim 6, Edman discloses wherein the step of enabling includes allowing the match line segment to discharge to a match condition (col. 5, line 66-col. 6, line 3).

With regard to claim 7, Edman discloses wherein the second match line segment is not prevented from discharging toward ground potential only when there is a match condition in the first row segment (col. 5, line 66-col. 6, line 3) (col. 6, line 27-30).

With regard to claim 8, Edman discloses a content addressable memory (CAM) including a plurality of rows, each of the rows comprising: a plurality of matchline segments (fig. 2, ML0, ML1) having a plurality of CAM cells coupled thereto (fig. 2, 1); a circuit for precharging the matchline segments to a first search result condition (fig. 2, 7, 8) (col. 4, line 14-32) (col. 5, line 45).; each said segment including: a sense circuit for

detecting a second result condition therein (fig. 3, 8); and a circuit for enabling a discharge path in a subsequent segment, to detect said second search result condition therein (fig. 3, 9).

With regard to claim 9, Edman discloses a method for searching a content addressable memory (CAM) having a plurality of rows of CAM cells, each row being coupled to an associated match line, each match line having a plurality of match line segments (Abstract), the method comprising: (a) precharging the plurality of match line segments to a first condition (col. 5, line 45); (b) searching a first segment in each match line (col. 5, line 46-58); and (c) selectively searching a second only if the search of the first segment results in a condition other than the first condition (col. 5, line 47-78).

With regard to claim 10, Edman discloses the method of searching a CAM further comprising the additional step of selectively searching any segment subsequent to the second segment only if the search of a previous segment results in a condition other than the first condition (col. 6, line 27-30).

With regard to claim 11, Edman discloses a method for searching a content addressable memory (CAM) having a plurality of rows of CAM cells, each row being coupled to an associated match line, each match line having a plurality of match line segments (Abstract), the method comprising: (a) precharging the plurality of match line segments to a "miss" condition (col. 5, line 45); (b) searching a first match line segment (col. 5, line 46-58); and (c) selectively searching a second only if a "hit"

condition is detected causing that segment and any subsequent segments to be disabled (col. 5, line 45-65) (col. 6, line 27-30).

With regard to claim 13, Edman discloses a method of performing a pipeline search operation in a content addressable memory (CAM) having segmented match lines (Abstract) comprising the following steps: (a) precharging the plurality of match line segments to a "miss" condition (col. 5, line 45); (b) searching a match line segment during a first clock cycle (col. 6, line 18-26); and (c) searching a subsequent match line segment during a subsequent clock cycle only in a case a "hit" condition is detected in a previous match line segment (col. 6, line 27-30).

With regard to claim 14, Edman discloses the method further comprising the step of disabling a subsequent match line segment in case a "miss" condition is detected in a previous match line segment (col. 5, line 45-65).

With regard to claim 15, Edman discloses the method further comprising the step of selectively disabling search line drivers associated with subsequent match line segments once a "miss" condition has been detected in a previous match line segment (col. 5, line 45-65).

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. Calin et al (6195278) and Chai et al (6452822) disclose CAM memory device having matchline segments.

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6. When responding to the office action, Applicants' are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

7. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02 (b)).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to whose telephone number is (703) 306-5731. The examiner can normally be reached on Mon. - Fri. from 8:00 A.M. to 5:30 PM. The examiner's supervisor, David Nelms, can be reached on (703) 308-4910. The fax phone number for this Group is (703) 308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-0956.



C. Yoha

January 2003



Connie C. Yoha

Patent Examiner

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